

REMARKS

Applicants thank the Examiner, Mr. Jeffery R. West, for his courtesies extended during the telephonic interview conducted on July 20, 2007, and for his assistance in advancing prosecution on the merits of the instant application. During the telephonic interview, independent claim 12 was discussed. No agreement was reached with respect to the patentability of the claims of the instant application. The following comments clarify and expand on the substance of the telephonic interview.

Claims 12-20 are currently pending in this application, with claim 12 being the only independent claim. Reconsideration of the above-identified application is respectfully requested.

Claims 12-14 and 18 stand rejected under 35 U.S.C. §103 as unpatentable over U.S. Patent Application Publication No. 2004/0002808 (“*Hashimoto*”) in view of U.S. Patent No. 4,727,549 (“*Tulpule*”).

Claim 15 stands rejected under 35 U.S.C. §103 as unpatentable over *Hashimoto* in view of *Tulpule*, and further in view of U.S. Patent No. 4,916,698 (“*McCann*”).

Claims 16 and 17 stand rejected under 35 U.S.C. §103 as unpatentable over *Hashimoto* in view of *Tulpule*, and further in view of U.S. Patent No. 5,406,485 (“*Wise*”).

Claim 19 stands rejected under 35 U.S.C. §103 as unpatentable over *Hashimoto* in view of *Tulpule*, and further in view of U.S. Patent No. 6,568,267 (“*Chida*”).

Claim 20 stands rejected under 35 U.S.C. §103 as unpatentable over *Hashimoto* in view of *Tulpule*, and further in view of U.S. Patent No. 6,366,005 (“*Ishikawa*”). For the following reasons, reconsideration and withdrawal of these rejections are respectfully requested.

Independent claim 12 recites the limitation “a checking section ... and a monitoring section ... the checking section including checking components designed for continuous

checking of the functional components ... and the monitoring section comprising monitoring components designed for monitoring the checking components at least once during one operating cycle, the monitoring components comprising a clock detector component monitoring a clock of a microcomputer contained in the checking section, a watchdog circuit monitoring the microcomputer and a memory testing device for testing memories within the checking section”.

The Examiner (pg. 4) of the Office Action concedes *Hashimoto* fails to teach or suggest “a memory testing device for testing memories with the checking section”. *Tulpule* has been cited to provide this feature. However, Applicants disagree that the combination of *Hashimoto* and *Tulpule* teaches the limitations of independent claim 12.

The Examiner (pg. 2 thru 3 of the Office Action) asserts that:

Hashimoto discloses a safety device for a rotation rate sensor ... comprising ... **a checking section** (i.e. microprocessor “110”) (0101, lines 1-6) and a monitoring section (0105, lines 1-8) ... **the checking section including checking components designed for the continuous checking of the functional components** (0237, lines 1-9), and the monitoring section comprising monitoring components designed for monitoring the checking components at least once during one operating cycle (0105, lines 1-8), the monitoring components comprising a clock detector component monitoring a clock (i.e. WD) of a microcomputer contained in the checking section and a watchdog circuit monitoring the microcomputer (0105, lines 1-8). (Emphasis Added)

Accordingly, the Examiner alleges that the components described in paragraph [0237] of *Hashimoto* correspond to the claimed “functional components” and that the microprocessor 110 is the claimed “checking section”. The Examiner further alleges that the components described in paragraph [0105] are the claimed monitoring components. Applicants disagree because, as will be described in more detail below, *Hashimoto* fails to disclose that the microprocessor 110 checks the functional components.

Hashimoto teaches a vehicle engine control device comprising an electronic substrate that is contained in a sealed receptacle (not shown) and that is mainly composed of a microprocessor 110 (paragraph [0085], lines 1-4; FIG. 1). *Hashimoto* further teaches that, *inter alia*, a “first digital input sensor group **101a** includes a rotation detection sensor **130** for detecting a rotational speed of an engine” (paragraph [0087], lines 1-3).

Regarding the functional components of paragraph [0237] referred to by the Examiner, *Hashimoto* describes that “the fuel injection control means **319** compares the engine rotational speed of, for example, 4000 (r/min) set by the upper limit rotation threshold setting means **321** with the actual rotational speed of the engine detected by the engine rotational speed detection means **318**, and carries out the fuel injection control for the fuel injection valve **137** so that the actual rotational speed of the engine does not exceed the upper limit rotational speed set by the upper limit rotation threshold setting means” (see paragraph [0237]).

With reference to FIG. 3 of *Hashimoto*, a control system for fuel injection to the engine is provided at the lower stage of a control means 300a. *Hashimoto* (paragraph [0131], lines 3-5) describes that “[t]his control system of fuel injection includes engine rotational speed detection means **318**, fuel injection control means **319**...”. As further described in *Hashimoto* at paragraph [0132], lines 1-4, “[t]he rotational speed detection means **318** calculates on/off signal density from the engine rotation detection sensor **130** included in the first digital input sensor group **101a** of **FIG. 1**, and detects the engine rotational speed”. *Hashimoto* (paragraph [0132], lines 4-7) also describes that “[t]he fuel injection control means **319** drives the fuel injection electromagnetic valve **137** and supplies a fuel of a suitable air fuel ratio to the engine. Finally, *Hashimoto* (paragraph [0132], lines 7-12) describes that “[t]his fuel injection control means **319** includes engine rotation suppression means for suppressing fuel supply to the fuel injection

electromagnetic valve **137** so that an actual engine rotational speed based on the engine rotation detection sensor **130** becomes an objective upper limit rotational speed or lower”. Consequently, *Hashimoto* teaches a control section that interfaces with the engine rotation speed detection sensor **130** and the fuel injection electromagnetic valve **137** shown in FIG. 1.

To support the allegation that the microprocessor 110 is considered a checking section, the Examiner refers to paragraph [0101] lines 1-6 of *Hashimoto*. However, this paragraph of *Hashimoto* merely describes output signals generated by the microprocessor 110. Thus, paragraph [0101] fails to disclose that the microprocessor 110 checks the functional components. To support the allegation that checking section includes components designed for continuous checking of the functional components, the Examiner further refers to paragraph [0237] of *Hashimoto*. The Examiner seems to infer that the components described in paragraph [0237] continuously check functional components. We do not agree that paragraph [0237] describes a checking procedure. However, assuming *arguendo* that the components described in paragraph [0237] perform a checking of the functional components, the control means 319 and the other components described in paragraph [0237] and shown in FIG. 3 are not located within the microprocessor 110 as asserted by the Examiner.

Moreover, *Hashimoto* fails to disclose that the microprocessor 110 performs checking of the functional components. Rather, *Hashimoto* discloses that the microprocessor generates signals, such as the signals listed in paragraph [0101], in response to the functional components, but does not check them. As stated above, the microprocessor 110 does not check the values generated by the function components. Accordingly, the microprocessor 110 of *Hashimoto* can not be considered to be the recited “checking section”.

Since the microprocessor 110 can not be considered to be a checking section, the watchdog timer circuit 119 of *Hashimoto* which monitors a pulse train generated by the microprocessor 110 does not monitor checking components, can not be considered to disclose “monitoring components designed for monitoring the checking components at least once during one operating cycle, the monitoring components comprising a clock detector component monitoring a clock of a microcomputer contained in the checking section, a watchdog circuit monitoring the microcomputer”, as recited in independent claim 12.

The Examiner cites *Tulpule* in an attempt to cure the shortcomings of *Hashimoto*, i.e., a watchdog circuit as part of a monitoring system, as recited in independent claim 12. *Tulpule* discloses a watchdog activity monitor for a processor self-test. Thus, *Tulpule* also fails to teach or suggest the “checking section” and “monitoring section” as recited in independent claim 12.

The Examiner cites *McCann* in an attempt to cure the shortcomings of the combination of *Hashimoto* and *Tulpule*, i.e., checking components that comprise a test injector, as recited in dependent claim 15.

The Examiner cites *Wise* in an attempt to cure the shortcomings of the combination of *Hashimoto* and *Tulpule*, i.e., the function section comprises digital and analog components, as recited in dependent claim 16 and 17.

Chida has been cited in an attempt to cure the shortcomings of the combination of *Hashimoto* and *Tulpule*, i.e., the sections are formed by ASICs with dedicated settings, as recited in dependent claim 19.

Ishikawa has been cited in an attempt to cure the shortcomings of the combination of *Hashimoto* and *Tulpule*, i.e., “the sensor element is a vibration gyro,” as recited in dependent claim 20.

However, each of these references fails to cure the deficiency of the device disclosed in *Hashimoto*, because *Tulpule*, *McCann*, *Wise*, *Chida* and/or *Ishikawa* individually or in combination, fail to teach or suggest “the checking section” or the “monitoring section” recited in independent claim 12. Therefore, independent claim 12 is patentable over the combination of the cited art.

Reconsideration and withdrawal of all the rejections under 35 U.S.C. §103(a) are therefore in order, and a notice to that effect is respectfully requested.

In view of the patentability of independent claim 12, dependent claims 13-20 are also patentable over the prior art for the reasons set forth above, as well as for the additional recitations contained therein.

Based on the foregoing amendments and remarks, this application is in condition for allowance. Early passage of this case to issue is respectfully requested.

It is believed that no fees or charges are required at this time in connection with the present application. However, if any fees or charges are required at this time, they may be charged to our Patent and Trademark Office Deposit Account No. 03-2412.

Respectfully submitted,
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